SIMPLIFY THE DEFENSE ENERGY INFORMATION SYSTEM

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DoD's current system for keeping track of petroleum fuel use – the Defense Energy Information System, Part I (DEIS-I) – is burdened by untimely reporting of data from the Services. DEIS-I data requirements were originally formulated to identify and monitor petroleum shortages caused by the Organization of Petroleum Exporting Countries (OPEC) embargo of the United States in 1973. At that time, the Executive Branch and Congress had little information to manage this crisis. We find that OSD does not need or use petroleum data at the level of detail provided by DEIS-I when there is no petroleum crisis.

We find that sufficient data are available from other sources to meet OSD, Executive Branch, and congressional needs. The Defense Fuel Automated Management System (DFAMS) provides data on bulk petroleum fuel issued to the Services by the Defense Fuel Supply Center (DFSC). DFAMS accounts for 97 percent of the Services' final consumption as reported by DEIS-I. In addition, DFSC maintains supplemental data on local deliveries to the Services that can augment DFAMS data. DFAMS data are sufficiently detailed to provide the information needed by OSD for all anticipated energy emergencies.

We recommend that OSD's Energy Policy Directorate simplify DEIS-I and use data from DFSC. DFSC should give OSD's Energy Policy Directorate petroleum data from DFAMS and supplemental sources. The Directorate will report quarterly data to the Department of Energy and allow the Services to review reports annually. A simplified system will make DEIS-I easier to use and will save DoD approximately $76,000 in direct annual costs.

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Executive Summary

SIMPLIFY THE DEFENSE ENERGY INFORMATION SYSTEM

DoD's current system for keeping track of petroleum fuel use – the Defense Energy Information System, Part I (DEIS-I) – is burdened by untimely reporting of data from the Services. DEIS-I data requirements were originally formulated to identify and monitor petroleum shortages caused by the Organization of Petroleum Exporting Countries (OPEC) embargo of the United States in 1973. At that time, the Executive Branch and Congress had little information to manage this crisis. We find that OSD does not need or use petroleum data at the level of detail provided by DEIS-I when there is no petroleum crisis.

We find that, even in the event of another embargo or energy crisis, sufficient data are available from other sources to meet OSD, Executive Branch, and congressional needs. The Defense Fuel Automated Management System (DFAMS) provides data on bulk petroleum fuel issued to the Services by the Defense Fuel Supply Center (DFSC). DFAMS accounts for 97 percent of the Services' final consumption as reported by DEIS-I. In addition, DFSC maintains supplemental data on local deliveries to the Services that can augment DFAMS data. DFAMS data are sufficiently detailed to provide the information needed by OSD for all anticipated energy emergencies.

We recommend that OSD's Energy Policy Directorate simplify the current DEIS-I system and use data from DFSC. DFSC personnel should provide petroleum data from DFAMS and supplemental sources to OSD's Energy Policy Directorate. The Directorate will provide quarterly data to the Department of Energy and annual data to the Services for their review. The Directorate should allow the Services to adjust that data, if necessary, to account for differences between end-use and DFSC issues. A simplified system will make DEIS-I easier to use and will save DoD approximately $76,000 in direct annual costs.

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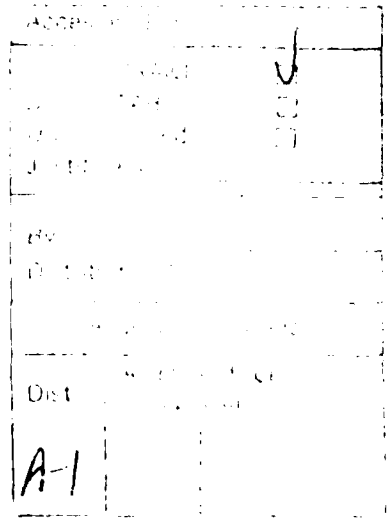


SIMPLIFY THE DEFENSE ENERGY INFORMATION SYSTEM

INTRODUCTION

The Energy Policy Directorate of the Office of the Assistant Secretary of Defense (Production and Logistics) [OASD(P&L)] establishes and implements energy policy for DoD. Development and implementation of energy policy during peacetime, crisis, or war are made easier by using the data available from various automated information systems. The Logistics Management Institute (LMI) has been tasked to examine several of these systems and specifically recommend improvements to Defense energy consumption reporting.

Three related Defense energy reporting systems provide supply and consumption data for all DoD activities:

- *Defense Energy Information System, Part I (DEIS-I).* This mainframe-based system contains data provided by the Services on their monthly use of petroleum fuel at each activity. The Defense Logistics Agency (DLA) provides information on reserves and bulk fuel supplies.
- *Defense Energy Information System, Part II (DEIS-II).* Part II of the DEIS cumulates data entered by the Services each month on consumption of facility energy. DEIS-II is not within the scope of this investigation.
- *Defense Fuel Automated Management System (DFAMS).* Data on fossil fuel inventories and wholesale distribution of these fuels to the Services are maintained in the DFAMS by the Defense Fuel Supply Center (DFSC), an element of DLA. These data aggregate 97 percent of the information in DEIS-I.

Background

During the 1973 oil embargo, DEIS-I data were collected weekly. After the embargo was lifted, DEIS-I data were collected monthly, but additional data were collected to check their accuracy. DEIS-I data have been used for the following purposes:

- The comparison of actual fuel consumption against stated requirements
- Historical data for statistical comparisons

- Congressional support data
- Congressionally mandated reports to the Department of Energy (DOE)
- Miscellaneous fuel management data for various levels of industry and Government.

DoD energy managers have noticed the apparent decline in usefulness of DEIS-I data. The view of all the Services is that no energy crisis is foreseeable in the near future. The Services are quick to point out the reporting burden imposed by DEIS-I. There are also recurring DEIS-I personnel and computer maintenance costs incurred by DFSC and the U.S. Air Force, Seventh Communications Group (7CG).

LMI has studied several alternative DEIS designs. We find that

- OASD(P&L) seldom needs the level of detail provided by DEIS-I.
- Each Service has its own operational fuel management information subsystem, so on-line user access to DEIS-I data is no longer required.
- DFAMS can provide timely information on the wholesale distribution of fuels to the Services.
- As for accuracy, DFAMS bulk fuel or "wholesale" data are adequate surrogates for Service-level data.
- Based upon timeliness and cost, DFAMS data are more appropriate to report to Congress.

For these reasons, we recommend that the Energy Policy Directorate simplify the current DEIS-I, replacing Service-level consumption data with bulk petroleum sales data from DFAMS.

Report Contents

This report reviews DEIS-I requirements. DFAMS and DEIS-I data are compared to show that wholesale DFAMS data can replace the retail DEIS-I data and can fulfill the new DEIS-I reporting requirements. We explore alternative procedures that would allow DoD to shift the source of DEIS-I data from end-use or "retail" consumption data (collected by the Services) to wholesale issues and inventories (collected by DFSC in DFAMS). If this shift is made, the Energy Policy Directorate will no longer require the Services to report DEIS-I data on a monthly basis. The Services may elect to annually adjust the Service data that are supplied by

DFSC. Moreover, DFSC will no longer need to perform monthly data edits on DEIS-I retail data.

We evaluate three options for simplifying DEIS-I and provide an implementation plan. Since successful implementation requires the support of several DoD offices, we recommend a team approach and outline the roles of team participants.

SURVEY OF DEIS-I USERS

A survey of DEIS-I editing activities and users identified existing problems and documented user requirements. To investigate DEIS-I accuracy, we interviewed the DFSC staff responsible for the data editing process. Late reporting of DEIS-I data was identified as a major contributor to inaccurate reporting. Although the Services frequently made incorrect inventory reports, over half of these "reporting errors" were simply the failure to submit a monthly report.

The DFSC staff periodically disseminate hard-copy and microfiche DEIS-I reports to the Services and other users. We surveyed the users of DEIS-I reports throughout DoD. The accuracy of this survey was enhanced by mailing a questionnaire to all DEIS-I users, conducting phone interviews, and mailing a follow-up letter.

To focus the telephone interview on the validity of the DEIS-I report, we asked the following three questions:

- What questions does DEIS-I answer that are critical to your decision-making or performance measurement activities?
- What would be the impact on your Service if DEIS-I were eliminated?
- What DEIS-I reports or queries are used or would be used during an energy crisis or war?

The answers to these questions and comments made by the survey respondents are provided in Appendix A. The important findings are as follows:

- The Services will experience no negative effects if DEIS-I is discontinued.
- DEIS-I hard-copy and microfiche reports are not used by the Services.
- Only the Army uses DEIS-I data for making operating decisions.
- Only DFSC uses DEIS-I data for strategic planning.

The Army uses retail DEIS-I data during the budgeting process. They reduced their initial fuel requirement budget requests by approximately 34 million gallons, or over $30 million in the past year. If DEIS-I is simplified, the Army DEIS Data Entry System (ADDS) can continue to provide this more detailed information.

DLA uses DEIS data for budget planning and would continue to collect similar information if DEIS-I were simplified. DFSC reported that, during a crisis, it would use DEIS-I to identify retail inventory levels at key locations for supply purposes. Nevertheless, DFSC would not recommend maintaining DEIS-I in its present form for that purpose alone. In any case, the fact that DEIS-I data are 6 months behind severely limits their value in an emergency. DFSC also uses DEIS-I information to conduct pipeline feasibility studies.

During a crisis, the Air Force would use DEIS-I data "...until the Fuels Automated Management System (FAMS)[1] is automated to consolidate...reports." All Services agreed that eliminating DEIS-I would have no negative effect. The Marines qualified their answer by adding "...as long as congressional reporting requirements can be met."

DoD ENERGY DATA REQUIREMENTS

OSD's Energy Policy Directorate does not currently need detailed data on retail petroleum fuel use for purposes of congressional reporting, energy conservation tracking, or policy formulation. DoD fuel managers need only the overview of the DoD fuel system provided by wholesale data. The symptoms of a fuel emergency such as supply disruptions, price increases, and purchasing difficulties first appear at the wholesale level. Retail data are only needed at the Service level, where they are used for day-to-day management of retail fuel operations.

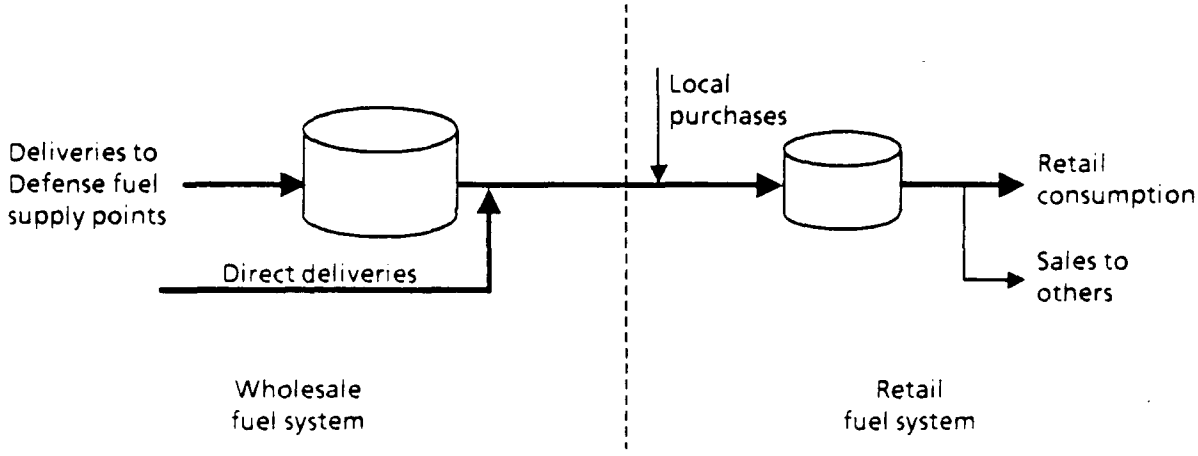
DFSC wholesale data not only cover about 97 percent of total DoD consumption, they also cover the portion over which OSD has the most control. War reserve stocks, for instance, are maintained as an integral part of DFSC's wholesale inventory. Geographically scattered local purchases involve relatively small volumes of fuel. Retail inventories, too, are largely unusable for discretionary purposes since they are supply system buffers, not reserve stocks. Such inventories exist to maintain

[1]FAMS is an Air Force system that is expected to become operational shortly; it is not related to DFAMS.

continual supplies between fuel deliveries. Any large drawdown of retail inventories during an emergency would cause severe supply disruptions since local activities would then run out of fuel between deliveries.

DoD Petroleum Fuel System

DFSC centralizes the purchase, storage, and distribution of petroleum fuel among the Military Services. It purchases most of DoD's petroleum fuels, particularly bulk jet fuels and Navy distillate fuels, on behalf of the Services. DFSC takes physical delivery of most such bulk fuels, stores them in its own tanks, and eventually delivers them to the Services for final use. DFSC's fuel purchase, storage, and distribution system comprises DoD's wholesale fuel system. (See Figure 1.)



Note: Arrows represent fuel distribution; tanks represent inventories.

FIG. 1. DoD FUEL DISTRIBUTION AND STORAGE

Retail fuels are those fuels that have passed from DFSC's control into the hands of the Services. The Services' retail inventories constitute less than a quarter of total DoD inventories. Retail inventories mainly serve as buffers in the retail distribution system.

The Services purchase a limited volume of fuel locally in cases where bulk purchases would be infeasible or less efficient. Those retail purchases include posts, camps, and stations (PC&S); into-plane; credit card; and similar fuel categories. Some Army and Navy PC&S fuels are obtained through DFSC contracts. The

Services also sell a limited volume of fuel to non-DoD agencies and allied military, indicated in Figure 1 as sales to others.

Wholesale Versus Retail Fuel Data

Table 1 demonstrates that DoD wholesale issues in DFAMS closely approximate DoD's retail consumption. We found that the differences between DoD's wholesale issues – the fuel supplied to the Services by DFSC – and retail consumption – the Services' final end use – are relatively small. Total wholesale issues in FY86 and FY87 averaged 97 percent of total retail consumption. (Appendix B provides more detailed information by product and by Service.)

TABLE 1

WHOLESALE VERSUS RETAIL CONSUMPTION

	FY86		FY87	
	Barrels (thousands)	Percentage	Barrels (thousands)	Percentage
Wholesale issues	168,358	98	163,771	95
Retail inventory draw/(build)	1,178	1	(1,037)	(1)
Retail purchases	1,691	1	9,992	6
Retail consumption	171,227	100	172,726	100

SIMPLIFICATION OF DEIS-I

The simplification options discussed in this report are based on the following changes in OASD(P&L) requirements:

- The Energy Policy Directorate of OASD(P&L) does not manage military fuel at the activity level and seldom requires data at that level.
- DOE congressional reporting requires quarterly data aggregated by Service and product line.
- Services and DLA have built their own automated petroleum information systems. Therefore, on-line access to DEIS-I data is no longer required.

The above changes were corroborated by the Defense Energy Action Group (DEAG) and the Energy Policy Directorate. Other options were explored that

required the continuation of activity-level reporting of retail data; one option retained all functions provided by the current DEIS-I. These options were determined by the DEAG to be excessive and were subsequently discarded.

The expression DEIS-I simplification is applied in a general sense. The most important aspect of this simplification is the reduction in the quantity of DEIS-I data reported. The current DEIS-I requires the annual submission and editing of over 5 million characters of data. With the proposed simplification of data requirements, DEIS-I will annually process less than 100,00 characters of data that DFSC personnel have already collected and edited for use in DFAMS.

The redesign options considered here call for the simplification of DEIS-I by replacing the mainframe database and software with microcomputer applications. Simplification of the current DEIS-I configuration will also reduce the level of maintenance support required. This approach, however, has the following limitations:

- OSD and the Services will respond to future information requests from Congress using the Service subsystems or DFAMS.
- The Integrated Requirements and Inventory System (IRIS) relies on detailed DEIS-I data that cannot be replaced by DFAMS and other DFSC data sources. (DFSC collects similar data that will support the same functions that IRIS performed.)
- The Petroleum Disruption Response System (PDRS) must be redesigned since it also uses DEIS-I data.

In times of war, the Joint Staff need the kind of retail data provided by DEIS-I. However, as our survey discovered, DEIS-I is neither responsive enough nor accurate enough for such purposes. We recommend that the Energy Policy Directorate examine DoD's wartime fuel reporting requirements further to ensure that wartime data needs can be met.

Cost Advantages of Simplification

Simplification of DEIS-I provides an opportunity to substantially decrease costs by reducing the Services' respondent burden. A DEIS-I report is currently required each month from every activity associated with a DoD Activity Address Code (DoDAAC), of which there are over 2,500. Although the time necessary for data collection and verification varies by size of the Activity, the Service energy offices

generally agree that 4 hours per month approximates the respondent burden. These data are submitted to Service automated systems, where they are processed and forwarded to the DEIS-I system. If DEIS-I is simplified, the indirect savings depends upon whether the Services continue to collect energy inventory and consumption data for their own management purposes.

The total direct savings will be about $76,000 per year if DEIS-I is simplified. The total computer systems cost for maintaining DEIS-I in FY87 was $41,000, consisting of $23,000 for processing, $15,000 for storage, and $3,000 for connection time. Since we estimate that a simplified microcomputer system would cost only $1,000 annually for storage, total computer cost savings will amount to $40,000 per year. Table 2 shows an additional annual savings of about $36,000 due to reduction of direct staffing support costs.

TABLE 2

ANNUAL SUPPORT STAFF SAVINGS FOR DEIS SIMPLIFICATION

[In thousands of dollars of cost (number of DoD staff)]

Personnel	(FY87 - simplified) = savings
Analyst	$ 19 (.5) - $19 (.5) = $ 0
Programmer/analyst	39 (1.0) - 19 (.5) = 20 (.5)
Data supervisor	39 (1.0) - 39 (1.0) = 0
Data analyst	32 (2.0) - 16 (1.0) = 16 (1.0)
Direct DoD support	$129 (4.5) - $93 (3.0) = $36 (1.5)

Alternatives for Simplification

All redesign options in this report recommend the simplification of DEIS-I. Each option can be introduced in stages and can be implemented in a microcomputer environment. In the first stage, DFSC transfers hard-copy reports to OASD(P&L), which then reports manually to DOE. Eventually, DFSC should provide American Standard Code for Information Interchange (ASCII) files to OASD(P&L). OASD(P&L) could then manipulate the data using a microcomputer spreadsheet.

The three options considered are summarized in Table 3. The major differences among these alternatives are the data sources for each option and the

frequency of reporting. Option 1 uses a combination of quarterly DFSC data and annual Service information. Option 2 requires quarterly information from DFSC data sources only. Option 3 requires quarterly information from the Services only. Each option is described further below.

TABLE 3

SUMMARY OF DEIS-I SIMPLIFICATION OPTIONS

Major issues	Option 1	Option 2	Option 3
Data sources	Service and DFSC	DFSC	Service
Service report frequency	Annually	None	Quarterly
DFSC report frequency	Quarterly	Quarterly	None
Data completeness	100 percent	>97 percent[a]	100 percent

[a] DFSC wholesale issues plus local purchase data

Option 1

In this option, DFSC will provide quarterly data to OASD(P&L) using DFAMS and other data sources. OASD(P&L) will prepare and submit quarterly reports to DOE. On an annual basis, the Services will review the quarterly reports and optionally adjust the fourth quarter, based on data from their petroleum information systems. These adjustments will be sent to OASD(P&L) and incorporated in the final quarterly report of each fiscal year.

The operational details can be developed in stages by OASD(P&L) and the Services. Initially, each Service will receive copies of its DFSC quarterly reports and can manually submit adjustments for the fourth quarter data to OASD(P&L). Since only aggregate data are required, each Service may optionally adjust only two values for each DoD product code and DOE product line: fuels issued and ending inventory.

Eventually, the annual Service adjustments could be submitted using a microcomputer spreadsheet. Such a spreadsheet would make annual adjustments easier to submit and would also improve the annual consolidation of adjustments before the final quarterly report is submitted to DOE to close out each fiscal year.

Similarly, the quarterly submissions by DFSC could initially be submitted to OASD(P&L) and to the Services in a hard-copy format. As time and resources allow,

DFSC could provide quarterly data in ASCII format. OASD(P&L) and the Services could then convert this ASCII file for use in their spreadsheets to make necessary adjustments or analyses.

Option 2

The second option is easier to implement and only requires DFSC data reporting. Although this option accurately reports total DoD fuel data, it inaccurately reports data for the Services, by overreporting some Services and underreporting others. (These Service data distortions appear in Appendix B.) Service data discrepancies would not appear in the DOE quarterly reports because they only contain total DoD data. However, DoD's annual brochure would inaccurately reflect the percentage of fuel consumption by Service.

The primary advantage of this option is cost savings. If DFSC were the only source of data, the transfer of data to OASD(P&L) would be less complicated to implement from a systems viewpoint. Also, if Service adjustments were eliminated, two advantages would result: OASD(P&L) and the Services would save a significant amount of time, and the DEIS-I redesign effort would be simplified. For this option, the only adjustments needed would be DFSC adjustments to DFAMS data (i.e., adjustments for PC&S purchases) obtained from other DFSC data sources. With these adjustments, Option 2 would reflect over 97 percent of the fuel consumed by DoD.

Option 3

A third alternative is to use the Services as the sole source of fuel consumption data. At first glance, this option appears similar to the current DEIS-I design. However, the amount of data submitted to OSD in this option is considerably less than the current DEIS-I design requires. DEIS-I now requires monthly submission and editing of data for about 2,500 activities. The proposed Option 3 would require the Services to consolidate the data (i.e., report one total Service figure) and report it quarterly.

This option has advantages: First, as the most accurate option, it requires no annual adjustments to the data. Second, no new data collection effort is required since each Service has an operational subsystem that currently collects and aggregates DEIS-I data. The redesign could focus on the development of a simple,

microcomputer spreadsheet to be developed for OASD(P&L) in cooperation with the Services' and DLA's technical support staff.

Option 1 Selected

To determine the best approach for simplifying DEIS-I, we considered the potential cost to implement each option. Computer and personnel savings will be roughly the same for all three simplification options. If design costs were the only consideration, Option 2 would be the best approach. Option 2 could be implemented using an off-the-shelf spreadsheet with no redesign effort to develop multiple spreadsheets for making Service adjustments.

We also considered the impact each option would have upon the accuracy of data. Although Option 3 has the advantage of using only one source for data input, the Services are reluctant to rely solely on their own subsystems for this information. Option 1 provides the best compromise since it greatly reduces the Services' reporting burden by making use of DFSC data. This option also allows the Services to make an annual adjustment to DFSC data which will compensate for the data that are not reported in DFAMS. By allowing the Services to adjust fourth quarter data, Option 1 adds the checks and balances needed to provide the most accurate data for the DOE annual report.

The timeliness of DOE reports will be substantially improved if Option 1 is selected. The first three quarters can be reported by OASD(P&L) within 60 days of the end of the quarter. The fourth quarter adjustment will take approximately 45 days for DFSC, 30 days for the Services to submit adjustments, and 30 days more for OASD(P&L) to aggregate the data for submittal to DOE. These figures represent a 67 percent improvement for the first three quarters and a 42 percent improvement for the fourth quarter, compared to the 180 days currently required to complete a quarterly report to DOE.

TEAM APPROACH TO DEIS-I TRANSITION

The transition from the current DEIS-I to the simplified version outlined in Option 1 will require coordination among DFSC, 7CG, the Services, and OASD(P&L):

- DFSC technical staff must develop Model 204 report queries that can provide hard-copy quarterly reports (by 31 July 1989).

- OASD(P&L), with support from 7CG, should obtain or procure micro-computer hardware and software (for use by 31 August 1989).
- DFSC technical staff must be able to convert hard-copy reports into ASCII files (by 31 October 1989).
- OASD(P&L) and 7CG should design a spreadsheet application for adjusting DFSC consumption data (by 1 November 1989).
- Services should develop procedures for reviewing and adjusting DEIS-I annual reports (by 15 November 1989).

OASD(P&L) Role

As the lead participant, OASD(P&L) should monitor progress and provide technical assistance when needed to complete the proposed simplification of DEIS-I. OASD(P&L)'s role includes providing the Services with quarterly data, spreadsheet tools, and assistance in adjusting the fourth quarter report. OASD(P&L) will also continue to report DEIS-I information to DOE.

DFSC Role

The key responsibility of DFSC is to provide DEIS-I data to OASD(P&L) from DFAMS and other data sources. As the future source of DEIS-I data, DFSC must first develop Model 204 queries or programs that will provide the required reports by product code, product line, Service, and in total. Initially, quarterly reports will be prepared for OASD(P&L) to forward to the Services and DOE as necessary. Ultimately, monthly and regional data may be required.

As time and staffing levels permit (but no later than 15 November 1989), DFSC should develop an efficient means to provide the reported information in ASCII format. Technical assistance from 7CG and OASD(P&L) will allow implementation of an optimal approach. For example, some of the calculated fields can be handled by the spreadsheet, which would minimize special programming requirements for DFSC's conversion of hard-copy report data to an ASCII formatted file.

The simplification of DEIS-I should be implemented following the close-out of FY88. DEIS-I editing staff at DFSC can be reassigned after these data are edited and finalized. Option 1's approach to processing future DEIS-I data should be initiated immediately to process FY89 data.

7CG Role

The simplification of DEIS-I will require 7CG support for the procurement and installation of microcomputer hardware and software, as needed. When DEIS-I becomes automated, 7CG should provide OASD(P&L) with technical assistance by testing the ASCII file conversion process using DEIS-I historical data and a Lotus 1-2-3 spreadsheet application (to be developed by LMI). Since OASD(P&L) already uses Lotus 1-2-3, we assume that the purchase of spreadsheet software is unnecessary.

Service Role

The Services will participate by reviewing DEIS-I quarterly reports and submitting annual adjustments if needed. It is essential that Services provide adjustments or notify OASD(P&L) of concurrence with the DFSC reports on a timely basis.

IMPLEMENTATION PLAN

The transition of DEIS-I from the mainframe to a microcomputer will be gradual. Initially, a simple spreadsheet application will be developed that will handle less than 100 Kilobytes of data annually. Gradually, DEIS-I may require monthly and regional data that will approach 3 Megabytes of annual storage.

OASD and 7CG will jointly develop the ASCII file conversion procedure and test it when converting the historical DEIS-I database to a simplified DEIS-I floppy disk format. The spreadsheet applications will be jointly tested using the simplified historical data. The testing phase will be completed before DFSC is required to convert its data to an ASCII file. This will allow OASD(P&L) and 7CG to work out any problems and assist DFSC in its ASCII file conversion process.

The Services can optionally obtain copies of the spreadsheet applications from OASD(P&L) before making annual adjustments to the fourth quarter DEIS-I report. It is anticipated that Lotus 1-2-3 spreadsheet software and microcomputers are available or can be obtained by the Services if needed.

GLOSSARY

ADDS	=	Army DEIS Data Entry System
ASCII	=	American Standard Code for Information Interchange
DEAG	=	Defense Energy Action Group
DEIS	=	Defense Energy Information System
DEIS-I	=	Defense Energy Information System, Part I
DEIS-II	=	Defense Energy Information System, Part II
DFAMS	=	Defense Fuel Automated Management System
DFSC	=	Defense Fuel Supply Center
DLA	=	Defense Logistics Agency
DoD	=	Department of Defense
DoDAAC	=	DoD Activity Address Code
DOE	=	Department of Energy
FAMS	=	Fuels Automated Management System
FY	=	fiscal year
IRIS	=	Integrated Requirements and Inventory System
LMI	=	Logistics Management Institute
OASD(P&L)	=	Office of the Assistant Secretary of Defense (Production and Logistics)
OSD	=	Office of the Secretary of Defense
PC&S	=	posts, camps, and stations
PDRS	=	Petroleum Disruption Response System
7CG	=	Seventh Communications Group

APPENDIX A

DEFENSE ENERGY INFORMATION SYSTEM, PART I, SURVEY

This appendix contains questions and corresponding responses from 15 representative users of Defense Energy Information System, Part I (DEIS-I) data. These responses were obtained and summarized from one or more telephone interviews.

What Defense Energy Information System, Part I (DEIS-I) reports or queries are used or would be used during an energy crisis or war?

1. None.

2. Perhaps if an energy embargo occurred, DEIS-I data would again be useful to this office.

3. During an energy crisis or war, the Army would rely on the Army DEIS Data Entry System (ADDS) information, not DEIS-I reports.

4. No response.

5. No DEIS reports or queries would be used during an energy crisis or war. Any needed information could be obtained from POLCAP [Petroleum, Oils, and Lubricants Capabilities Report] and REPOL [Petroleum Damage Deficiency Report], which are Joint Staff [JS] directed formats.

   Bulk sales and into-plane refueling accounts for 90 percent of the fuel consumed by the Navy. The Defense Fuel Automated Management System (DFAMS) does a good job of providing this data. The only information that DFAMS does not provide is data on post, camp, and station contracts. This is a very small quantity that the Navy can estimate without DEIS assistance. The DEIS is not a user-friendly system and contains erroneous data.

6. None.

7. The need for DEIS-I information during a crisis or war is a concern. If, however, the Fuels Automated Management System (FAMS) is automated to consolidate Fuels Policy Branch reports, DEIS-I data would not be used even during a crisis or war.

8. In the 1970s DEIS-I was a timely report that was useful. With the coming of FAMS, assuming it will be a timely system, DEIS-I will become obsolete.

9. If nothing else was available, DEIS-I would be used during a crisis or war; however, DFAMS supplies the needed information at the present time.

10. DEIS-I would not assist in day-to-day decisions during an energy crisis or war because the information is not timely enough.

11. DEIS reports or queries are not used by J-42.[1] DFAMS is more pertinent to J-42 information requirements.

12. No DEIS-I queries or reports would be helpful during an energy crisis or war.

13. POL [i.e., petroleum, oils, and lubricants] management and accounting procedures are suspended during wartime. DEIS-I provides an accurate status of petroleum stocks by product and shows consumption trends by installation, activity, and season. If an allocation system were imposed for petroleum products, DEIS-I data would be needed.

14. During a crisis, the inventory levels at key locations are needed for supply purposes. This is primarily used by the Defense Fuel Supply Center (DFSC).

15. None. We use REPOL during a crisis or war.

What would be the impact on your Service (or activity) if DEIS-I were eliminated?

1. None.

2. None.

3. There would be no impact if DEIS-I was eliminated except that ADDS would be simplified to collect on-hand balance and consumption data by product. (DEIS-I requires the reporting of more information than is needed or used by the Army.)

4. DFAMS data does not include information on FOB [free on board] destinations. If DFAMS data could show all products delivered to an activity by each mode, then DEIS-I data would not be needed.

   DEIS-I data reports are maintained on microfiche and have been archived and used for the past several years. Someone in authority should demand that all Services provide timely DEIS-I inputs.

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[1] Joint Staff Logistics Directorate.

5. There would be no impact if DEIS-I were eliminated (except for the reduction of the burdensome reporting requirement that is demanded of local activities).

6. The impact of eliminating DEIS-I would be insignificant. From the Navy perspective, the money spent on this system cannot be cost-justified. If DEIS-I is left in place, however, the reporting frequency should be reduced.

7. The Air Force would be unaffected if DEIS-I data were eliminated.

8. There would be no impact if DEIS-I was eliminated.

9. Nothing bad would happen if DEIS was eliminated.

10. If DEIS-I was eliminated, there would be a substantial benefit to the Navy. The reporting burden from Navy activities involves over 8,000 messages per year plus a major effort to prepare this information for reporting.

11. J-42 would experience no negative impact if DEIS-I was eliminated. J-42 gets needed information from the weekly 1884 reports from field activities. A positive impact would be the reduction of the reporting burden and follow-up editing of data for 600 ships and 100-plus (actually 235) shore activities.

12. There would be no negative impact if DEIS-I were eliminated as long as congressional reporting requirements can be met by other means.

13. If DEIS-I was eliminated, there would be no negative effect. The Army would continue managing fuel requirements with ADDS. Without ADDS, however, the Army installations and activities would waste millions of DFSC stock fund dollars with unnecessary fuel requests.

14. There would be no negative impact if DEIS-I was eliminated.

15. There would be no impact if DEIS-I was eliminated.

What questions does DEIS answer that are critical to your decision-making or performance measurement activities?

1. DEIS-I data are neither used nor monitored by this office. DEIS-II data are very important.

2. DEIS-I data are not used and the report is not looked at. As an energy conservation monitor on an Air Force Base 10 or 11 years ago, DEIS-I data were very useful.

3. None. Decision-making and performance measurement questions are answered by ADDS, not by DEIS.

4. DEIS-I information is used to conduct feasibility studies that cover a 10-year period. They use it to study how much product has been received by a particular activity (by all modes) to determine if a pipeline service would be a favorable option.

5. DEIS does not answer critical questions for this office.

6. None. Since DEIS-I was initiated, a lot of this information has been automated in procurement and planning systems. Also, the integrity of the DEIS-I data is unreliable.

7. None. DEIS-I data are occasionally used as trend data. The data are not accurate nor are they timely enough to use as a micromanagement tool.

8. None. If DEIS-I was timely, it would be useful. However, Kelly Air Force Base will soon provide the same type of information under FAMS. Currently, FAMS information is 60 to 90 days behind, but they promise to provide microcomputer access to their system in the near future.

9. DEIS-I is not being utilized.

10. DEIS-I is not used.

11. DEIS-I is not used by J-42. It can be used as a source of information on individual ship fuel consumption but not by this activity.

12. DEIS-I does not answer any critical questions for the Facilities and Services Division because it deals with mobility, not facilities issues. The DEIS-I yearly summary report is useful for determining fuel requirements.

13. The information captured on the DEIS-I report allows the comparison of actual fuel consumption by product against stated requirements by installation and activity. With the aid of DEIS-I data, the Army reduced its initial fuel requirements request by approximately 34 million gallons during the past year without degradation to readiness or training. DEIS-I also provides historical data for statistical comparisons, congressional support data, and fuel management data required at various levels of Government.

14. None. DEIS-I provides inventory levels, but that is not critical. These are used at the DFSC level.

15. None.

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APPENDIX B

COMPARISON OF WHOLESALE DATA WITH RETAIL DATA

Tables B-1 and B-2 present a detailed comparison of DoD's wholesale issues with retail consumption for FY86 and FY87. This comparison was made to help determine whether wholesale issues could substitute for retail data for DoD's information reporting and policy making purposes. The comparison shows that wholesale issues averaged 97 percent of retail consumption during this recent period. Wholesale issues data were taken from the Defense Fuel Automated Management System (DFAMS), while the retail consumption and inventory data came from the Defense Energy Information System, Part I (DEIS-I).

The tables break down the comparison by Military Department [including the Defense Logistics Agency (DLA) and other DoD Components] and by product type. To minimize differences due to inter-Service transfers, we have combined the Navy and the Marine Corps figures. In addition, the tables display annual changes in retail inventory from DEIS-I. Those changes have been slight, averaging less than 1 percent of consumption over the period measured.

We have bridged the remaining gap between wholesale issues and retail consumption by calculating an estimate of the net retail purchases and sales. The latter quantities behave as expected, i.e., local sales of jet fuel are of the right magnitude and in the right direction. Also as expected, local purchases of fuel oil, motor gasoline (Mogas), and aviation gasoline (Avgas) are large relative to wholesale issues of those fuels. The Services, particularly the Army, obtain a large proportion of those products from local fuel suppliers rather than from the wholesale system. Nevertheless, fuel oil and Mogas represent relatively little of DoD's total fuel use – less than 2 percent of total wholesale issues.

The tables demonstrate that wholesale fuel data reliably capture most of the information regarding DoD fuel use at an aggregate level.

TABLE B-1

FY86 COMPARISON BY MILITARY DEPARTMENT AND PRODUCT TYPE

Service	(000) barrels				
	Wholesale issues	Retail inventory draw/(build)	Estimated retail purchases/ (sales to others)	Retail consumption	Wholesale as percent of retail
Air Force	'05,095	1,468	(5,365)	101,198	'04
Navy/Marines	55,797	(432)	(24)	55,341	'01
Army	7,412	131	7,057	14,600	5'
DLA/other DoD	54	11	23	88	62
Total	'68,358	1,178	1,691	171,227	98
Product type	**(000) barrels**				
Jet fuel	'28,288	881	(7,599)	121,570	'06
Distillate	36,748	(242)	(2,775)	33,731	'09
Fuel oil/other	1,718	445	9,388	11,551	'5
Mogas/Avgas	1,603	94	2,678	4,375	37
Total	'68,357	1,178	1,692	171,227	98

TABLE B-2

FY87 COMPARISON BY MILITARY DEPARTMENT AND PRODUCT TYPE

Service	(000) barrels				
	Wholesale issues	Retail inventory draw (build)	Estimated retail purchases/ (sales to others)	Retail consumption	Wholesale as percent of retail
Air Force	'02,169	(530)	165	'01,804	'00
Navy/Marines	55,237	(465)	1,914	56,686	97
Army	6,328	(53)	7,350	14,'25	45
DLA/other DoD	37	1'	62	''0	34
Total	'63,771	(1,037)	9,991	172,725	95
Product type	**(000) barrels**				
Jet fuel	'31,057	(738)	(7,809)	122,510	'07
Distillate	28,923	(392)	6,016	34,547	84
Fuel oil/other	2,374	62	9,256	11,692	20
Mogas/Avgas	1,417	31	2,528	3,976	36
Total	'63,771	(1,037)	9,991	172,725	95